

Problem 1

Write a program to create a customer's bill for a company. The company sells only five different products: Jaguar, Remote, CDi, 3DO, and Betamax. The unit prices are \$249.00, \$49.59, \$1000.00, \$699.99, and \$1300.00, respectively. The program must read the quantity of each piece of equipment purchased from the keyboard. It then calculates the cost of each item, the subtotal, and the total cost after a 5.25% sales tax. To make certain the spacing for the output remains consistent regardless of name length use \t (tabs) instead of spaces. Make sure that prices print out with only two decimal points showing by formatting them, and have the prices right aligned in the column. (the easiest way to right align is when formatting the decimal e.g. .4f to put a number divisible by 5 like 5.4f).

The input data consist of a set of integers representing the quantities of each item sold. These integers must be input into the program in a user friendly way; that is, the program must prompt the user for each quantity as shown below. The numbers in boldface show the user's answers.

How Many Jaguars Were Sold? **5**
How Many CDi's Were Sold? **3**
How Many Remotes Were Sold? **4**
How Many 3DO's Were Sold? **2**
Haw Many Betamax's Were Sold? **1**

The format for the output should be as follows:

```
How many Jaguars were sold?5
How many CDIs were sold?2
How many Remotes were sold?4
How many 3DOs were sold?2
How many Betamax Players were sold?1
QTY      DESCRIPTION      UNIT PRICE      TOTAL PRICE
-----
5        JAGUAR             249.00          1245.00
2        CDI               1000.00         2000.00
4        REMOTE CTRLR       49.59           198.36
2        3DO               699.99         1399.98
1        BETAMAX           1300.00         1300.00
                        SUBTOTAL          6143.34
                        TAX              322.53
                        TOTAL           6465.87
```

Use defined constants for the input prices and the tax rate. Use integer variables to store the quantities for each item. Use float variables to store the total price for each item, the bill subtotal, the tax amount, and the total amount of the bill.

Problem 2

Adapt your code for Problem 3 so that the data is read and written from/to files.

Key changes:

The program must read the quantity of each piece of equipment purchased from a file.

The output must be written to a file, properly formatted as it is in Problem 1.

Problem 3

Write a program to generate random number between 25 and 50. Hint:

```
srand(time(NULL));    //This will set our seed for the program
```

```
rand() % 8 will generate random numbers between 0 and 8 (0 : 7)
```

```
rand() % 3 + 8 will generate random numbers between 8 and 10 (8 : 10)
```

```
rand() % ((max + 1) - min) + min will generate random number between min and max (min : max)
```